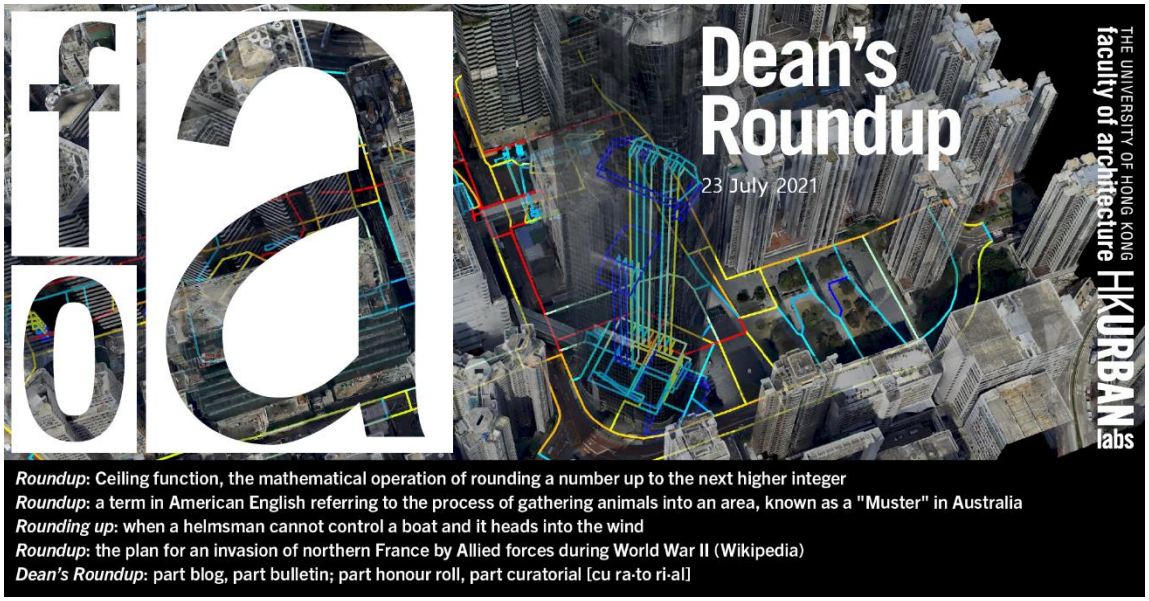


Soundtecture and programmable sound-space

'Soundtecture' is the title of a recent FoA exhibition in HK's PMQ cultural quarter that filled a small cell-like room with ambient and directed sound. FoA architects Thomas Tsang and Sony Devabhaktuni have been working for some time with colleagues in HKU Music Department on the interfaces of architecture, sound and dance. The exhibition invited visitors to experience sound made and shaped by architectural artefacts and by the room itself, with and without human performers. Texture, material, relative position, direction, 3D configuration as well as the originating sound waves and the emotions that generated and received them were the substance of the curatorial invention and experiment.

What if the physical (analogue) architectural and material relationship with sound could be completely replaced by the digital? Something like this happens when Lindsey Stirling gets on stage with her electric violin. But while the physical architecture of the instrument has been modelled digitally, the audience and performer are still locked in an 'analogue' experience determined by the traditional physicality of inanimate and animate spaces, shapes, limbs, ears, eyes and heartbeat. The music chamber is still an analogue instrument and its architecture matters.

What if we could digitise the chamber as we have the violin? Well, perhaps we have done that already. As a child I used to dismantle and rebuild electronic speaker systems, and later, could easily imagine how the 'woofer' and 'tweeter' of ever-more sophisticated 'hi-fi' systems might work. I have no idea, however, how my 10cm tall portable Bose home speaker is able to generate a surround-sound that turns my study into the Carnegie Hall. Another step for the complicated relationship between architecture and music. But there are more complications to explore.

My Bose speaker, however advanced its electronic simulation, still projects within a physical space. What if we could unite the entire listening environment into an adaptable fully sound-engineered chamber? I have a 45-year-old Takamine 6-string guitar. I bought it because of the unbelievable sound definition of the electronic pick-up built into the bridge, which was cutting edge at the time. The guitar's body is crafted beautifully from rosewood. But the acoustic sound is a little dead; not as much as a semi-acoustic but lacking the woody resonance of, say, a modern Martin guitar with a much smaller body. What if I could digitally adjust the wood to perform acoustically like a Gibson Vintage 1911? What if we could programme HKU's Wong & Ouyang designed Grand Hall to reflect sound like London's Albert Hall or Sydney Opera House? Or programme the Grand Hall experimentally to create bespoke sound experiences, like Thomas Tsang's PMQ exhibition but using the entire programmable space as the instrument?

Daniel Chua, Professor and Chair of Music in HKU and I, recently had lunch with HKU president at the University Lodge. We came up with an idea. Or to be accurate, President Zhang came up with an idea. I have talked about President Zhang's invisible cloak invention in a previous DRup. A flip side of the cloak technology that allows light to bend around a physical object to render it literally invisible, is the ability to manipulate how sound is reflected from physical surfaces. Zhang once built a lego model coated in sound-bending material, creating a 3D architectural structure with programmable sound reflectance properties. I think the properties were hard wired into the surfaces but since the quality comes from an engineered and modifiable molecular structure, this can be made to be programmable electronically. The technology has never been explored in an application. I have the scientific paper if anyone is interested. The President's challenge: Daniel and I and colleagues in music and architecture work together with a team of molecular material scientists led by the President, to experiment with sound-programmable architecture.

Thomas's exhibition may be the start of something big. Anyone interested, let me know and I will set up a meeting. The first step would be to find a visionary donor.

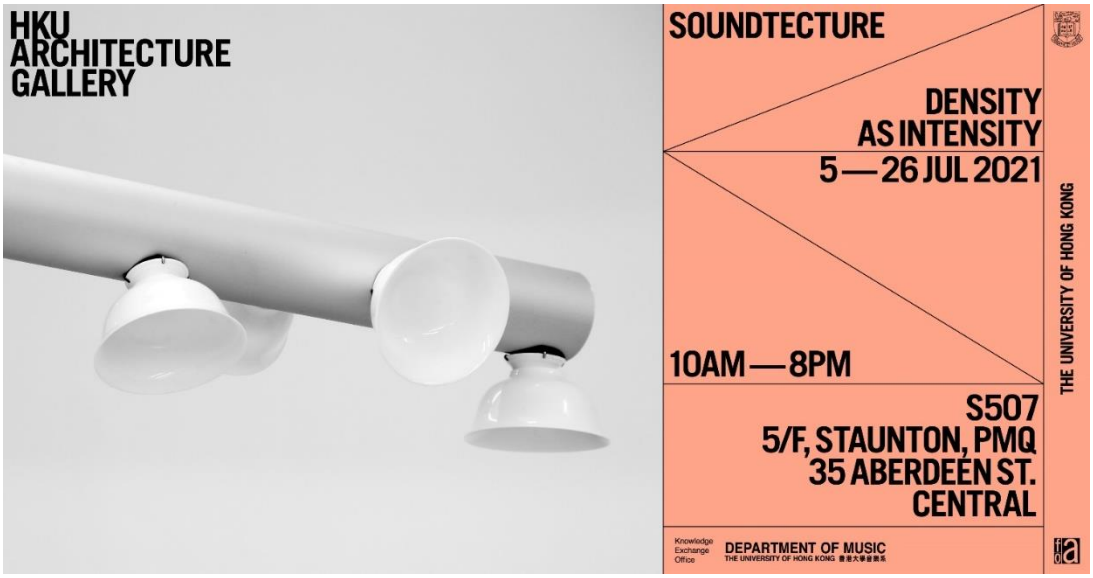
Congratulations below to our prize-winning students, grant-winning teachers and authors of some fascinating papers. I would normally avoid advertising work I have been involved in, but I think PhD student Yvonne Ka Yan Lai's paper, recently accepted by *Landscape and Urban Planning* (IF 6.1), is the best large-scale study in 125 years, of 19th century French sociologist Emile Durkheim's idea of *urban anomie*.

Chris
Dean, FoA

Department of Architecture

1. ‘Soundtecture: Density as Intensity’ Exhibition @PMQ

   A continuation of the long-term collaboration between HKU’s Department of Architecture and Department of Music, ‘Soundtecture: Density as Intensity’ presents new ideas at their intersections, and was opened with a live performance by musician Nelson Hiu.



   This exhibition documents a series of works that explore the collaborative potential between sonic arts and architectural installation. Each work marked a stage in *Soundtecture: Density as Intensity*, a project supported by HKU’s Interdisciplinary Knowledge Exchange Project Fund that brought together the Department of Architecture and Department of Music at the University as well as leading partners in an exploration of the relationship between sound and architecture. The initiative aims to facilitate projects to create an impact in the community by building on interdisciplinary creative outputs in the University.

   Borne out of the desire to document five years of interventions across the music / architecture divide, work on this exhibition soon veered toward fragmentation, re-use, and contemplation.

   A work of bricolage welcomes you straight-leg into the gallery space. Broken down into modular, easy-to-handle units of 1,300 mm each, aluminum tubes (originally 6 m long) have morphed into pipes. Stacked together, each with a portable speaker at one end, they give rise to an emerging sculptural form that behaves like a makeshift organ. The resulting, digitally and analogically mediated sound adapts background material devised for a performance that took place in Shenzhen in 2017. Like heated asphalt, the compound object gives off a sonic ‘haze’ that colours our perception of life as seen through the gallery’s front and rear windows. But it is against the wall that the sound waves bounce off, reverberating into all kinds of directions and filling each crevice of

the space. A wall is reflective but also absorptive. Sound splashes across and seeps into the solid white wall like a giant stain.

Blending in on the left side are portrait-style photos of details of the infrastructure that underpinned an event held in Hong Kong in 2019. Further, a bundle of bamboo paper, made of the remnants of 33 doors, stands like an empty plinth between two haunting photographic renderings of two dismantled performance sites.

Whether you walk in, stay inside and listen, or step away to look at the whole, the exhibition is an invitation to experience the interplay of absorption and reflection in their optical, acoustical, and metaphorical articulations.

Team: Thomas Tsang (Associate Professor of Architecture, HKU); Giorgio Biancorosso (Director, Society of Fellows in the Humanities and Professor of Music, HKU); Deborah Waugh (Assistant Lecturer of Music, HKU); Nanamu Hamamoto (Artist)

Please visit the HKU Architecture Gallery webpage for more information: https://www.arch.hku.hk/events_index/exhibitions/?cat=hku-architecture-gallery.

Date:	**5 July 2021 (Monday) – 26 July 2021 (Monday)**
Time:	**10:00am – 8:00pm**
Venue:	**S507, 5/F, Staunton (Block A), PMQ, 35 Aberdeen Street, Central, Hong Kong**

2. Dr Eike Schling

- has been awarded a Teaching Development Grant for his 'Comparative Modelling' project.

  The project will investigate the relationship of digital and physical models in teaching, research and practice. By comparing their behaviour and highlighting their differences, the project creates evidence of the relationship and limitations of modeling and fosters a meaningful and scientific use of digital and physical experimentation.

  This project will run for 12 months with a funded full-time TA and involve four participating courses in Building Technology, Visual Communication, Robotic Fabrication and Design Studio.

  Co-investigators: Jason Bond, Adjunct Assistant Professor
  Christian Lange, Associate Professor (Teaching)
  Sherene Ng, MArch Year 1 student

Division of Landscape Architecture

1. Dr Bin Chen

   - has received the LAWR 2020 Distinguished Postdoctoral Scholar Award from the University of California, Davis.

   'The 2020 Distinguished Postdoctoral Award is awarded to Dr Bin Chen. Bin is a geographer and remote sensing scientist keen to leverage geospatial and remote sensing data and analytics to address a wide range of global environmental change challenges. While serving his role as a Postdoctoral scholar at UC Davis, he worked on several projects in agriculture and forest monitoring, and interactions between vegetation, climate change, human activities, and wildfires using quantitative, modeling, and computational skills. He receives this award owing to his research excellence in data-driven agricultural monitoring, historical analysis of California's wildfires, and global land cover and land-use changes.'

   - has received funding from The Research Council of Norway for a collaborative project led by The University of Oslo's Centre for Ecological and Evolutionary Synthesis (CEES):

     Researcher Project for Young Talents 2021 – 'Modelling the epidemiological dynamics of past and current zoonotic diseases in humans' (Project No: 325041, at 8 million Norwegian krone).

Academic partners:

Norway	University of Oslo	**Li (Project manager, or PI), Stenseth (co-PI),** Mysterud, Easterday, Jakobsen
	Norwegian Veterinary Institute	Kausrud, Dean
China	The University of Hong Kong	**Chen (Task leader)**
	China CDC	Liu
	Tsinghua Uni.	Guan
USA	PennState Uni.	**Bjørnstad (Task leader)**, Pak
	Princeton Uni.	**Metcalf (Task co-leader)**
UK	Imperial College London	Pawar

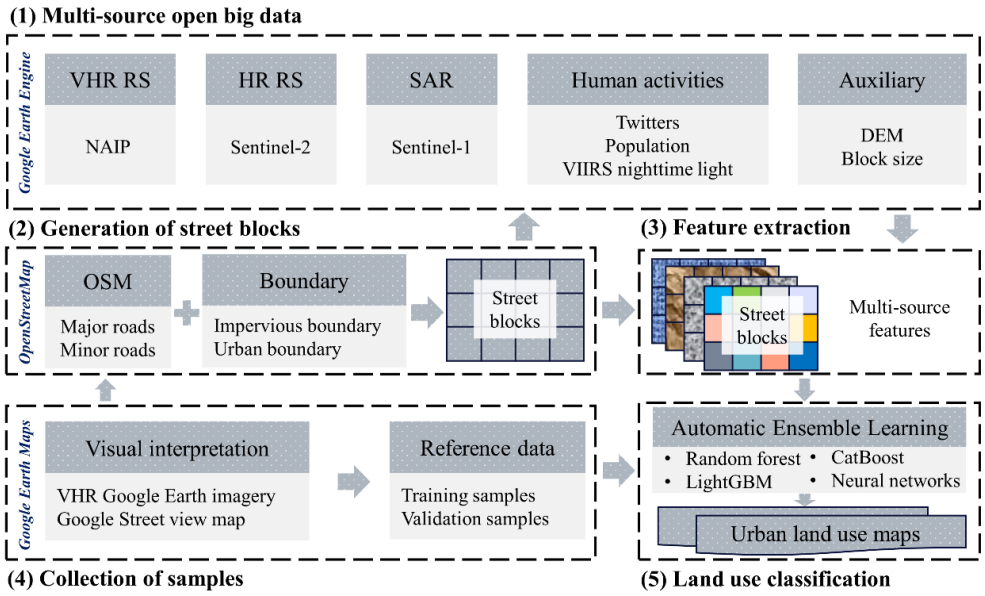
- has given an invited talk for the Sun Yat-Sen University Summer School on the topic of 'Space-Air-Land-Sea Intelligence Sensing Technology', on 14 July 2021.

- has published the following papers:

(i) **Chen, B.**, Tu, Y., Song, Y., Theobald, D. M., Zhang, T., Ren, Z., Li, X., Yang, J., Wang, J., Wang, X., Bai, Y., Xu, B. & Gong, P. (2021). Mapping essential urban land use categories with open big data: Results for five metropolitan areas in the United States of America. *ISPRS Journal of Photogrammetry and Remote Sensing, 178*, 203-218, ISSN 0924-2716. DOI: https://doi.org/10.1016/j.isprsjprs.2021.06.010

Abstract: *Urban land-use maps outlining the distribution, pattern, and composition of various land use types are critically important for urban planning, environmental management, disaster control, health protection, and biodiversity conservation. Recent advances in remote sensing and social sensing data and methods have shown great potentials in mapping urban land use categories, but they are still constrained by mixed land uses, limited predictors, non-localized models, and often relatively low accuracies. To inform these issues, we proposed a robust and cost-effective framework for mapping urban land use categories using openly available multi-source geospatial "big data". With street blocks generated from OpenStreetMap (OSM) data as the minimum classification unit, we integrated an expansive set of multi-scale spatially explicit information on land surface, vertical height, socio-economic attributes, social media, demography, and topography. We further proposed to apply the automatic ensemble learning that leverages a bunch of machine learning algorithms in deriving optimal urban land use classification maps. Results of block-level urban land use classification in five metropolitan areas of the United States found the overall accuracies of major-class (Level-I) and minor-class (Level-II) classification could be high as 91% and 86%, respectively. A multi-model comparison revealed that for urban land use classification with*

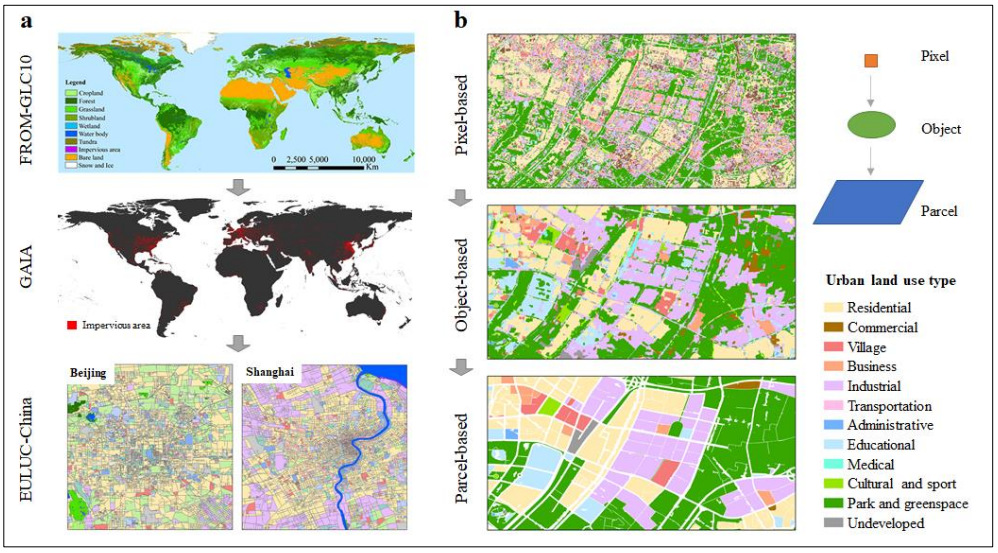
high-dimensional features, the multi-layer stacking ensemble models achieved better performance than base models such as random forest, extremely randomized trees, LightGBM, CatBoost, and neural networks. We found without very-high-resolution National Agriculture Imagery Program imagery, the classification results derived from Sentinel-1, Sentinel-2, and other open big data based features could achieve plausible overall accuracies of Level-I and Level-II classification at 88% and 81%, respectively. We also found that model transferability depended highly on the heterogeneity in characteristics of different regions. The methods and findings in this study systematically elucidate the role of data sources, classification methods, and feature transferability in block-level land use classifications, which have important implications for mapping multi-scale essential urban land use categories.



(ii) **Chen, B.**, Xu, B. & Gong, P. (2021). Mapping essential urban land use categories (EULUC) using geospatial big data: Progress, challenges, and opportunities. *Big Earth Data*, 1-32. DOI: https://doi.org/10.1080/20964471.2021.1939243

Abstract: *Urban land use information that reflects socio-economic functions and human activities is critically essential for urban planning, landscape design, environmental management, health promotion, and biodiversity conservation. Land-use maps outlining the distribution, pattern, and composition of essential urban land use categories (EULUC) have facilitated a wide spectrum of applications and further triggered new opportunities in urban studies. New and improved Earth observations, algorithms, and advanced products for extracting thematic urban information, in association with emerging social sensing big data and auxiliary crowdsourcing datasets, all together offer great potentials to mapping fine-resolution EULUC from regional to global*

scales. Here we review the advances of EULUC mapping research and practices in terms of their data, methods, and applications. Based on the historical retrospect, we summarize the challenges and limitations of current EULUC studies regarding sample collection, mixed land use problem, data and model generalization, and large-scale mapping efforts. Finally, we propose and discuss future opportunities, including cross-scale mapping, optimal integration of multi-source features, global sample libraries from crowdsourcing approaches, advanced machine learning and ensembled classification strategy, open portals for data visualization and sharing, multi-temporal mapping of EULUC change, and implications in urban environmental studies, to facilitate multi-scale fine-resolution EULUC mapping research.

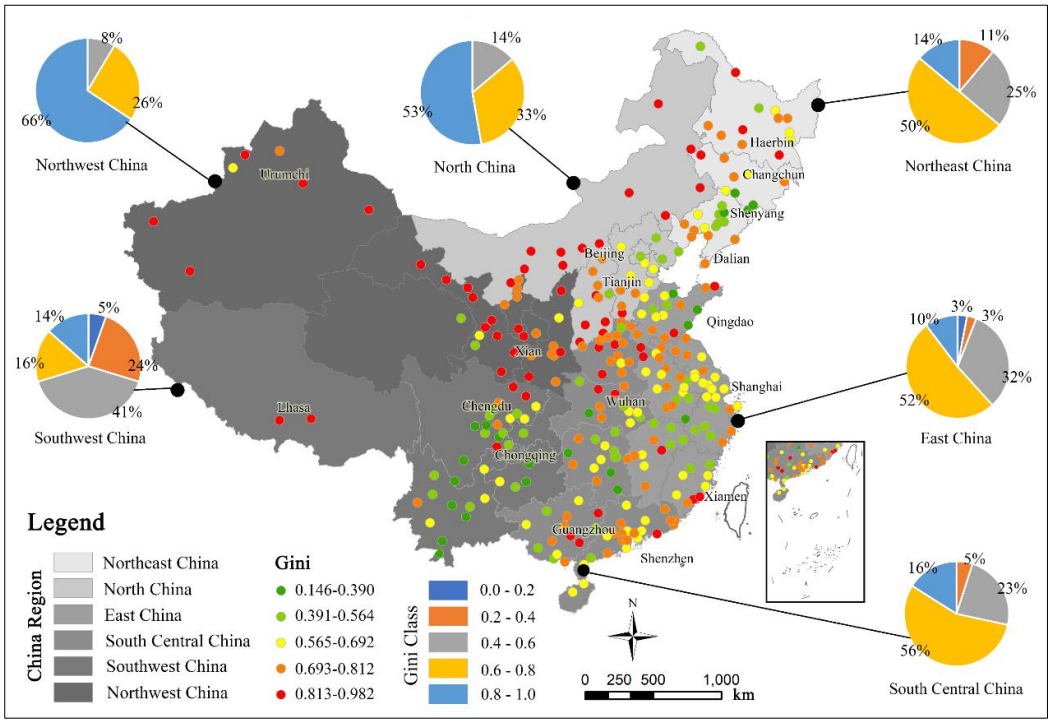


- has the following article accepted for publication:

  Song, Y., **Chen, B.***, Ho, H., Kwan, M., Liu, D., Wang, F., Wang, J., Cai, J., Li, X., Xu, Y., He, Q., Wang, H., Xu, Q., & Song, Y. (2021). Observed inequality in urban greenspace exposure in China. *Environment International*. In press.

  Abstract: *Given the important role of green environments playing in healthy cities, the inequality in urban greenspace exposure has aroused growing attentions. However, few comparative studies are available to quantify this phenomenon for cities with different population sizes across a country, especially for those in the developing world. Besides, commonly used inequality measures are always hindered by the conceptual simplification without accounting for human mobility in greenspace exposure assessments. To fill this knowledge gap, we leverage multi-source geospatial big data and a modified assessment framework to evaluate the inequality in urban greenspace exposure for 303 cities in China. Our findings reveal that the majority of Chinese cities are facing high inequality in greenspace exposure, with 207 cities having a Gini index larger than 0.6. Driven by the spatiotemporal variability of human*

distribution, the magnitude of inequality varies over different times of the day. We also find that exposure inequality is correlated with low greenspace provision with a statistical significance (p-value < 0.05). The inadequate provision may result from various factors, such as dry cold climate and urbanization patterns. Our study provides evidence and insights for central and local governments in China to implement more effective and sustainable greening programs adjusted to different local circumstances and incorporate public participatory engagement to achieve a real balance between greenspace supply and demand for developing healthy cities.



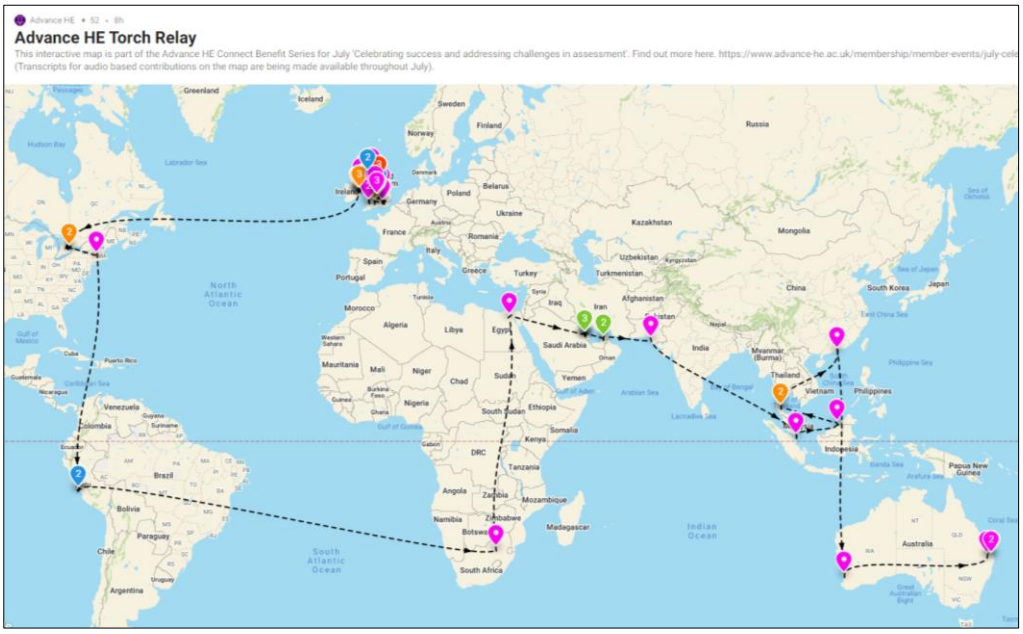
2. Vincci Mak

- has been awarded the HKU Gallant Ho Experiential Learning Fund 2021-22 (First Round), for her project titled ‘New Models in Village Revitalization in Hong Kong’.

3. Nikolas Ettel

- The Advance HE has launched its summer project, *The Connect Benefit Series*, in which 89 academics from 21 countries release one-minute contributions to an interactive map in an analogue to the Olympics torch relay, followed by online events and teaching and learning conferences: https://www.advance-he.ac.uk/membership/member-events/july-celebrating-success-and-addressing-challenges-assessment#vlog.

  Ettel has been chosen as the 'torchbearer' for Hong Kong and he has made a short video about 'pandemic teaching', available for viewing at https://padlet.com/kathywright/cqz526jy2oj5kac5.



Department of Urban Planing and Design

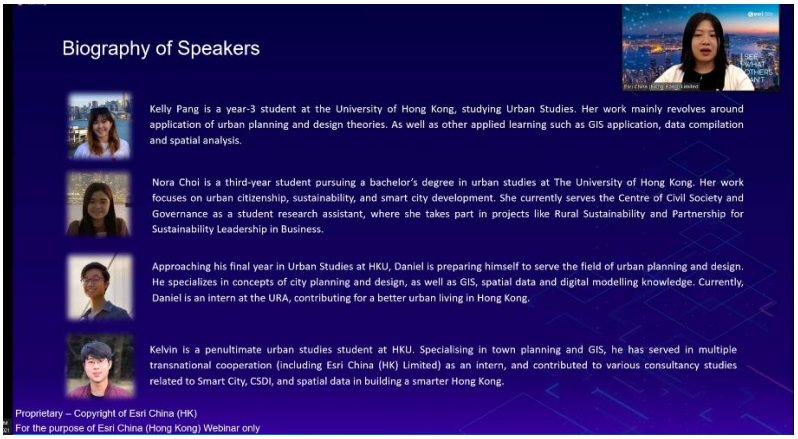
1. ‘GeoSpatialTech Challenge’

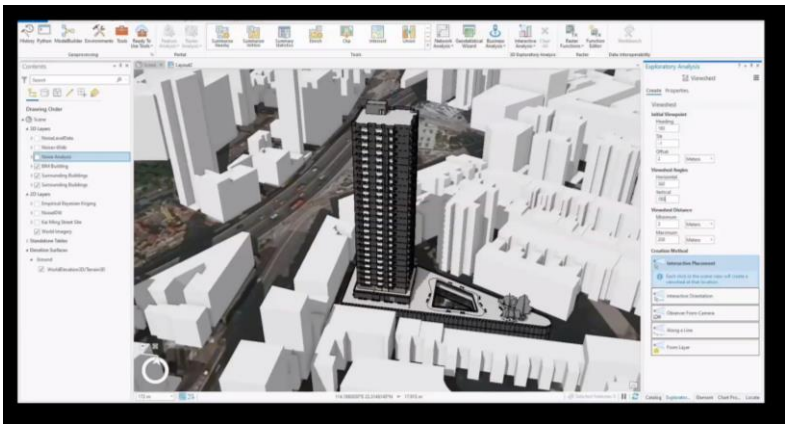
   - Tommy Chan (MUP Year 2) and Andy Chung (MUA Year 1), both graduated from BAUS, have been awarded Champion of the Student Category in the ‘GeoSpatialTech Challenge’ jointly organised by the Lands Department, Hong Kong Science & Technology Parks Corporation and Common Spatial Data Infrastructure (CSDI).

     The objective of this competition was to promote the application of spatial data for smart living and healthy lifestyle in Hong Kong. Participants were invited to first submit innovative proposals for the improvement of community facilities with the use of geospatial data on the Hong Kong GeoData Store and other open data, then present their ideas in the first and final competition rounds. The prize-giving ceremony was held at the Hong Kong Science Park on 30 June 2021.

2. GIS BIM Integration on Town Planning

   - BAUS Year 3 students Kelvin Cheng, Nora Choi, Daniel Lui and Kelly Pang were invited by ESRI China (Hong Kong) to give a public webinar on ‘GIS BIM Integration on Town Planning’. In the webinar, they showed how GIS-BIM integration could overcome planning and development difficulties in the contemporary era by applying GIS, BIM, and CIM technologies into the development cycle, and demonstrated that the adoption of spatial technology into urban planning and building construction fields would be inevitably revolutionary.





3. Professor Rebecca Chiu

   - was invited to participate in the project 'Financialisation of the Housing Market: an International Comparison', as advisor and researcher. The project is funded through The Knowledge Centre for Housing Economics which is part of Realdania, a strategic foundation in Copenhagen. The purpose is to assess the impact of financialisation from the different perspectives across academic disciplines, as well as the lessons to be learned from the different experiences across 12 countries and cities.

Centre of Urban Studies and Urban Planning

1. Professor Anthony Yeh

   - presented in the webinar of 'In Search of New Economic Cooperation Models Between Hong Kong and the Greater Bay Area', on 9 July 2021: http://www.dupad.hku.hk/cusup/gba/webinar/

Jointly organised by the Centre of Urban Studies and Urban Planning, Institute for China and Global Development, Business School, and Department of Geography of the University of Hong Kong, the webinar presented and discussed the findings of the research project of the same title, under the Strategic Public Policy Research (SPPR) Funding Scheme of the Policy Innovation and Co-ordination Office (PICO) of the HKSAR Government, led by Professor Anthony G. O. Yeh of the Department of

Urban Planning and Design, with Professor Zhigang Tao (Business and Economics), Professor George C. S. Lin (Geography), Dr Xingjian Liu (Urban Planning and Design), and Dr Fiona F. Yang (Geography and Urban Planning, Sun Yat-Sen University, Guangzhou) as Co-Investigators. It also aimed to provide a platform for industry and business leaders and professionals to share their insights on new economic cooperation models between Hong Kong and the Greater Bay Area and innovative policies needed in breaking barriers and building bridges for promoting such development. Over 250 participants from business, professional bodies, government departments, and universities have registered for the webinar.

The Opening Addresses were delivered by Professor Richard Y. C. Wong, Provost and Deputy Vice-Chancellor of the University of Hong Kong, and Mr Benjamin Mok, Deputy Commissioner for the Development of the Guangdong-Hong Kong-Macao Greater Bay Area of the Hong Kong SAR Government. Following the presentations on major findings of the SPPR study and possible new economic cooperation models, nine distinguished panellists representing both the private and public sectors and professional institutes joined in a discussion to exchange their views on how Hong Kong can capitalise on the opportunities brought about by the development of the GBA and proactively develop innovative policies to implement new economic cooperation models between Hong Kong and the GBA.

An *Information Net on the Guangdong-Hong Kong-Macau Greater Bay Area*, which provides a one-stop portal for finding information and understanding the Greater Bay Area, has been produced as part of the SPPR study: http://www.dupad.hku.hk/hkprd/greaterbay/english/index.htm

2. Dr Derrick Ho

- has published the following article as a co-first author:

  Cheng, J.*, **Ho, H. C.*,** Su, H., Huang, C., Pan, R., Hossain, M. Z., Zheng, H., & Xu, Z. (2021). Low ambient temperature shortened life expectancy in Hong Kong: A time-series analysis of 1.4 million years of life lost from cardiorespiratory diseases. *Environmental Research, 201*, 111652, ISSN 0013-9351. DOI: https://doi.org/10.1016/j.envres.2021.111652

  *co-first authors

  Abstract: *Ambient temperature is an important contributor to mortality burden worldwide, most of which is from cold exposure. However, little is known about the cold impact on life expectancy loss. This paper aimed to estimate cold-related life expectancy loss from cause-, age-, and gender-specific cardiovascular and respiratory diseases. Daily deaths from cardiovascular and respiratory diseases and weather records were acquired for Hong Kong, China during 2000–2016. Years of life lost (YLL) that considers life expectancy at the time of death was calculated by matching each death by age and sex to annual life tables. Using a generalized additive model that fits temperature-YLL association, we estimated loss of years in life expectancy from cold. Cold was estimated to cause life expectancy loss of 0.9 years in total cardiovascular diseases, with more years of loss in males than in females and in people aged 65 years and older than in people aged up to 64 years. Cold-related life expectancy loss in total respiratory diseases was 1.2 years, with more years of loss in females than in males and comparable years of loss in people aged up to 64 years and in people aged 65 years and older. Among cause-specific diseases, we observed the greatest life expectancy loss in pneumonia (1.5 years), followed by ischaemic heart disease (1.2 years),*

COPD (1.1 years), and stroke (0.3 years). Between two periods of 2000–2007 and 2008–2016, cold-related life expectancy loss due to cardiovascular diseases did not decrease and cold-related life expectancy loss due to respiratory diseases even increased by five times. Our findings suggest an urgent need to develop prevention measures against adverse cold effects on cardiorespiratory diseases in Hong Kong.

Keywords: Cold, cardiovascular disease, respiratory disease, life expectancy, Hong Kong.

3. Dr Xiaohu Zhang

- has published the following articles:

(i) **Zhang, X.**, Shen, Y., & Zhao, J. (2021). The mobility pattern of dockless bike sharing: A four-month study in Singapore. *Transportation Research Part D: Transport and Environment, 98*, 102961, ISSN 1361-9209. DOI: https://doi.org/10.1016/j.trd.2021.102961

Abstract*: Many cities around the world have adopted dockless bike-sharing programs with the hope that this new service could enhance last-mile public transit connections. However, our understanding of the travel patterns using dockless bike sharing is still limited. To advance the knowledge on the new service, this study investigates mobility patterns of dockless bike sharing in Singapore using a four-month dataset. An exploratory spatiotemporal analysis is conducted to show daily travel patterns, while community detection of networks is used to explore the spatial clusters emerged from cycling behaviors. A series of Poisson regression models are then estimated to characterize the generation, attraction and resistance factors of bike trips in different periods of a day. The proposed regression model, which considers built environment factors of origin and destination simultaneously, is proved to be effective in deciphering mobility. The empirical findings shed light on policy implications in sustainable transportation planning.*

(ii) Zhao, J., Zhang, X., & Cao, Z. (2021, July 7). Can e-scooter sharing serve short transit trips in Singapore? *Intelligent Transport*. https://www.intelligenttransport.com/transport-articles/126460/e-scooter-sharing-singapore/

Healthy High Density Cities Lab

1. Ka Yan Lai, Dr Chinmoy Sarkar, Sarika Kumari and Dean Webster

   - have the following paper accepted for publication:

   Lai, K. Y., Sarkar*, C., Kumari, S., Ni, M. Y., Gallacher, J., & Webster, C. (2021). Calculating a national Anomie Density Ratio: Measuring the patterns of loneliness and social isolation across the UK's residential density gradient using results from the UK Biobank study. *Landscape and Urban Planning*. In press.

   Abstract: *Urban life has long been pilloried in history for its negative effects on the human condition and mind. From Thomas Jefferson to Emile Durkheim, high density urban living as an aberration to be rectified has been part of the modern discourse on cities. While empirical studies into the psychiatric effects of unwanted social contact began in earnest after WW2 and we now know much about environmental causes of stress, the evidence of the impacts of increasing urban densification upon loneliness and social isolation in humans still remains inconclusive. We employed high-resolution geospatial built environment exposure data to examine associations between residential density and loneliness and social isolation among 405,925 UK Biobank cohort participants. Residential unit density was measured within a 1- and 2-Km residential street network catchment of a participant's geocoded dwelling. Other health-specific built environment (i.e., street-level physical walkability, density of public transport, traffic intensity of the nearest road, mean street distance to destinations), and physical environment exposures (terrain variability and greenspace exposure modelled from remotely-sensed data) were also measured at individual-level as attributes of each participant's geocoded dwelling. We found for the UK, that every 1,000 units/km^2 increment in residential density within a 1-Km network catchment was independently associated with a 2.8% (odds ratio: 1.028, p=0.0058) and 11.4% (OR: 1.114, p<0.0001) higher odds of loneliness and social isolation respectively. This can be interpreted as the density elasticity of loneliness (social isolation), which we coin as the Anomie Density Ratio (ADR). In addition, with reference to the lowest density quartile, the fourth-quartile was associated with 14.4% and 30.4% higher odds of loneliness and social isolation respectively. The associations were slightly more pronounced at the spatial scale of 2-Km, indicating the possibility of a scale effect in this emblematic urban-ill. Higher density of detached housing was negatively associated with both loneliness and social isolation, while density of flats was positively associated with both outcomes. More pronounced effects of residential density on loneliness were identified among males and those retired, while for social isolation, a similar effect was observed among the retired. As far as we know, this is the first study to measure the density-loneliness effect using individual (non-ecological) data on a large national sample, controlling for personal confounders and mitigating environmental*

factors such as green space. Density was associated with loneliness and social isolation independently of other factors, which means that urban design and density planning strategies matter; especially in an age of accelerating suburban densification.

***Keywords*:** Loneliness, social isolation, anomie, residential density, built environment, UK Biobank, UKBUMP.

2. Dr Chinmoy Sarkar

- published a paper in collaboration with academics at Cardiff University and University of Oxford, UK.

  Moore, S. C., Orpen, B., Smith, J., **Sarkar**, **C.**, Li, C., Shepherd, J., & Bauermeister, S. (2021). Alcohol affordability: implications for alcohol price policies. A cross-sectional analysis in middle and older adults from UK Biobank. *Journal of Public Health*, fdab095, ISSN 1741-3842. DOI: https://doi.org/10.1093/pubmed/fdab095

  Background: *Increasing the price of alcohol reduces alcohol consumption and harm. The role of food complementarity, transaction costs and inflation on alcohol demand are determined and discussed in relation to alcohol price policies.*

  Methods: *UK Biobank (N = 502,628) was linked by region to retail price quotes for the years 2007 to 2010. The log residual food and alcohol prices, and alcohol availability were regressed onto log daily alcohol consumption. Model standard errors were adjusted for clustering by region.*

  Results: *Associations with alcohol consumption were found for alcohol price (β = −0.56, 95% CI, −0.92 to −0.20) and availability (β = 0.06, 95% CI, 0.04 to 0.07). Introducing, food price reduced the alcohol price consumption association (β = −0.26, 95% CI, −0.50 to −0.03). Alcohol (B = 0.001, 95% CI, 0.0004 to 0.001) and food (B = 0.001, 95% CI, 0.0005 to 0.0006) price increased with time and were associated (ρ = 0.57, P < 0.001).*

  Conclusion: *Alcohol and food are complements, and the price elasticity of alcohol reduces when the effect of food price is accounted for. Transaction costs did not affect the alcohol price consumption relationship. Fixed alcohol price policies are susceptible to inflation.*

  The study was cited in the UK Parliament's House of Lords. The Liberal Democrats' Baroness Jenny Randerson highlighted the above-published work on food prices and alcohol consumption, as follows:

  'Recent research by Cardiff University—I declare an interest as chancellor of that university—has demonstrated the link between food purchases and alcohol purchases. Buying the food for our meal literally prompts us to pick

up the bottle of wine or beer from the next aisle of the supermarket. This research suggests that food and alcohol sales need to be separated and not part of the same trip to the till. Many other countries do this. I recall that in Australia the same supermarket sold both sets of items, but you went to a totally separate section and paid a separate bill for the alcohol. Finland, Sweden, Canada and some parts of the US apply similar rules. The Government should explore this.

We need further controls on the advertising of alcohol. Finally, we need more information on labels and when we buy alcohol in the pub. If we buy a lemonade or crisps or a bar of chocolate, we know the calories and contents. When we drink a glass of wine, we deserve to have access to the same information on calories and the number of units.'

https://hansard.parliament.uk/Lords/2021-04-22/debates/DC307679-EA51-43C7-B981-0B5F741427D2/AlcoholHarmCommissionReport2020?highlight=cardiff%20university#contribution-A0C610AE-D38D-4746-B01D-8C68F23A5C38

iLab

1. Dr Frank Xue

   - has received a funding award from the Shenzhen Science and Technology Innovation Commission (SZSTI) under the Shenzhen-Hong Kong-Macau Technology Research Programme (Type C), for his research project titled '3D Point Cloud and Dynamic Semantics Enabled Lean Quality Assurance System for Prefabricated Housing Products', at the amount of RMB 1 million, for a two-year period from July 2021 to July 2023.

     Co-Is (HKU team): Professor Wilson Lu, Dr Shell Li, Liupengfei Wu, Jinfeng Lou, and Zhe Chen

     Co-Is (SZU team): Dr Clyde Zhengdao Li, Professor Jiayuan Wang, Dr Yi Tan, and Limei Zhang

     ***Abstract**: Prefabricated construction is vibrant in the Guangdong-Hong Kong-Macau Greater Bay Area (GBA) but encounters difficulties in quality inspection and control. This project aims to resolve the problems using an integrated system of multi-LiDAR-based high-precision quality inspection equipment and a Lean construction quality control workflow. More than half of the manual quality inspection items will be automated and digitalised. The deliverables are in line with the standardisation, digitalisation, and lean trends of prefabricated construction in the GBA, the national strategy of construction industrialisation, and global smart construction research.*

Ronald Coase Centre for Property Rights Research

1. Professor Kelvin Wong

   - has published the following article in *Journal of Planning Education and Research*, which is ranked 1/43 in Urban Studies category and 2/40 in Regional and Urban Planning category by SSCI (Social Sciences Citation Index), with an impact factor of 7.217 [Source: Journal Citation Reports – Journal Profile (clarivate.com)]:

     Wong, S. K., & Deng, K. K. (2021). School catchment zone mergers and housing wealth redistribution. *Journal of Planning Education and Research*. Advance online publication. DOI: https://doi.org/10.1177/0739456X211006760

     ***Abstract**: This study investigates how perceived school quality affects housing values, using a new estimation method. Our empirical design takes advantage of the mergers of school catchment zones initiated by the government to develop quasi-experiments. We find that, in zones that gained sudden access to higher ranked schools, housing prices increased by 1.3 to 4.1 percent. Larger and more expensive houses appreciated more in response to the improvement in perceived quality of available schools. The findings generate important policy implications regarding housing wealth redistribution and housing expenditures among different households. The study also enriches the literature on the capitalization effect of school quality.*